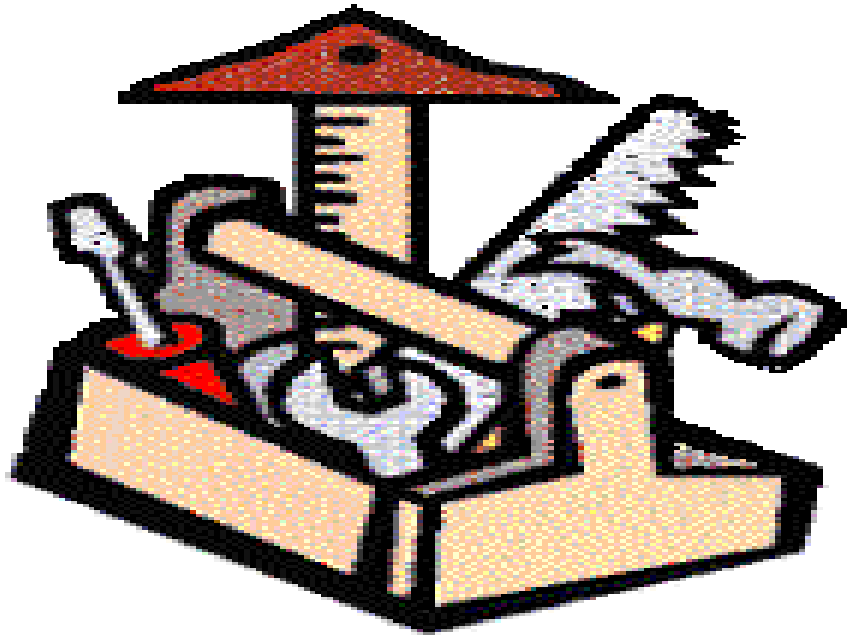
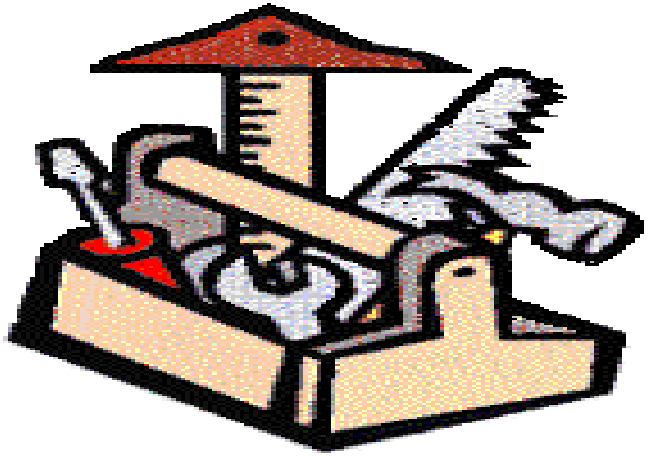
Integrated Safety Management
Activity-Level Work Control Tools Index



Distributed by EH-5 and the National Enhanced Work Planning Steering Committee

Integrated Safety Management (ISM) Activity-Level Work Control Tools

Since 1994, Enhanced Work Planning (EWP) teams across the DOE Complex have proven themselves effective at dramatically improving work control processes and the integrated safety management (ISM) system. A wide variety of tools and work products have been developed by these teams to **advance the principles of EWP and ISM**. Complete copies of these tools and/or information on how to obtain the latest versions are found on the EWP Homepage: http://tis-nt.eh.doe.gov//WPPHM/ewp. For additional information, contact The Department of Energy, Office of Worker Health and Safety (EH-52). These tools, close to one hundred in number, can be grouped into the following 9 categories:



- Integrated Work Control
- Task Hazard Analysis
- Work Scheduling and Prioritization
- Hazard Controls
- Performance Indicators and Feedback and Improvement
- Worker Involvement
- Training
- Infrastructure
- Program and Process Plans

The tools are the products of focused efforts by multidisciplinary EWP teams responsible for improving work management in their organizations. Many of these tools are available on the EWP homepage. Additionally, the national EWP Steering Committee and the sites responsible for a tool's development are available to provide assistance in understanding and using their work products.

The various tools advance one or more of the eight ISM Guiding Principles. For example:

- the ***Hanford Automated Job Hazard Analysis*** tool promotes integration and consistency within an organization by allowing all organizations to work with a standard hazard identification tool;

- the ***Savannah River Rollback Handbook*** fosters the collaboration of multidisciplinary groups (planners, managers, work control support organizations, environment, safety and health (ES&H) subject matter experts, and hourly workers) in determining necessary and sufficient radiological controls and allows an integrated contamination rollback solution to be implemented.

These tools have been instrumental in assisting line organizations implement ISM at the activity level. At sites across the complex, the tools developed through the key elements of EWP initiative have been effective in greatly improving site work control processes that will assist in applying the five and the eight guiding principles of ISM. These **tools are well conceived and established and have contributed to measurable improvements in our work control systems** for accomplishing work safely.

ISM GUIDING PRINCIPLES

- Line Management Responsibility for Safety
- Clear Roles and Responsibilities
- Competence Commensurate with Responsibilities
- Balanced Priorities
- Identification of Safety Standards and Requirements
- Hazard Controls Tailored to Work Performed
- Operations Authorization
- Worker Involvement

THE FIVE KEY ELEMENTS OF ENHANCED WORK PLANNING

- Promote line management ownership of the work control process
- Utilize a multi-disciplinary approach to planning;
- Adopt a risk-based, graded approach to work control, as merited;
- Ensure worker involvement beginning at the earliest phases of work control processes; and
- Institutionalize effective communication systems.

The tools summarized in this "tools index" lend themselves to the challenges faced by those implementing ISM at the activity level. While it is unlikely that these tools could be adopted "as is" by another organization, thought should be given to the problems the tools are attempting to solve, whether similar problems are faced by the organization, and whether there are any concepts or

Integrated Safety Management System Activity-Level Work Control Tools Index

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Integrated Work Control	**Work Planning and Permit Information System** (Computerized Work Control Tool) The East Tennessee Technology Plant's (ETTP's) Work Planning and Permit Information System (WPPIS) is a comprehensive, interactive web-based system used to identify and document ES&H concerns and requirements and the necessary levels of planning. It provides a cost effective means to develop a documented, technically complete work package that properly incorporates all necessary ES&H plans, permits, and procedures. It also provides detailed guidance to the user about when a permit is to be used and how various fields within the permit should be completed. WPPIS guides and documents decisions related to the necessary level of planning rigor, degree of supervision, hazard assessment -- consistent with a risk-based, graded approach. WPPIS, a cornerstone of the Site's Integrated Safety Management (ISM), is used by work initiators, approvers, planners, ES&H organizations and craft to help identify and document hazards, job requirements, and necessary permits. WPPIS features include: "ticklers" to minimize technical errors and omissions during planning and assembly of work packages; electronic documentation of work permits and hazard controls; and automated linkages between the planning team members and to important intranet sites. By simply reducing the administrative effort necessary to compile, organize, and administer the dozens of daily job plans, WPPIS has resulted in a 100% return on the programming investment in less than three months. The system has been implemented by the majority of ETTP projects in waste management operations and maintenance and is presently being introduced to other Bechtel Jacobs organizations at Y-12, ORNL, Portsmouth and Paducah.	CB	I	OR	5, 6

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Integrated Work Control (cont'd)	**Maintenance Work Control Procedure (MCP 2798/Rev. 7)** The MCP provides a standardized work control process for all maintenance work conducted on the INEEL site using the concepts of Enhanced Work Planning. This administrative *work control* process ensures that *maintenance* tasks are properly requested, authorized, planned, reviewed, performed, and closed in a safe and efficient manner. The administrative process for controlling maintenance tasks and modifications performed at Lockheed Martin Idaho Technology Company (LMITCO) facilities is included within the scope of the procedure. This procedure also applies to subcontracted maintenance, modifications, and temporary modification work not covered by the Davis-Bacon Act.	D	I	ID	1, 2, 5, 6, 7
	MK-Ferguson's *CAN DO!* Enhanced Work Planning Program Describes the strategic alliance between MK-Ferguson's *CAN DO!* construction work control program and the Oak Ridge EWP program. Written documentation is provided of how hazards are identified; how different levels of work control rigor are specified; how multidisciplinary teams are used for planning; how job walkdowns are performed; how supervisors communicate hazards to their workforce; how customer feedback and lessons learned are compiled and used; and how success in the work control system is measured.	D	I	OR	1, 2, 5, 6, 8
	Integrated Work Control Program Manual The Integrated Work Control Program (IWCP) is the method by which Integrated Safety Management (ISM) is implemented at the task level at the Rocky Flats Environmental Technology Site (RFETS). It provides a single process through which **all** work at RFETS is performed. It ensures that the work is	D	I	RF	1, 2, 3, 4, 5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Integrated Work Control (cont'd)	screened consistently to uniform criteria and that hazards are appropriately analyzed and controlled. IWCP was developed as the primary mechanism of institutionalizing ISM into the work planning, management, execution, and control processes at RFETS. The IWCP establishes requirements and process controls for **all** work planned at RFETS. All maintenance, modifications, deactivation, decommissioning/demolition (D&D), remediation, operational activities requiring procedures, and construction work is performed under the IWCP. Administratively, the IWCP consolidated 15 different work control documents into one central work management manual. The IWCP: • Incorporates the principles of EWP into the planning and performance of work; • Describes the process to identify and document the nature of the work or activity; • Prescribes the methods to identify hazards and define specific controls for each type of work being planned; • Describes the process for identifying the proper level of planning associated with the respective job complexity and hazards (graded approach); • Describes the process for establishing the appropriate work controls and documentation for the specific job hazards identified; • Describes processes and controls for work documentation and closeout; • Provides a mechanism for feedback to ensure continuous improvement through the use of a Post Job Review process, procedure reference library, and lessons learned database.				
	Waste Minimization Drill-Down Report The Nuclear Material Stabilization and Storage Division at the Savannah River Site is conducting an assessment of waste that is being generated and	D	D	SR	1, 6, 8

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Integrated Work Control (cont'd)	disposed of within the facilities. This effort is being conducted to not only to characterize the waste, but also to identify opportunities for pollution prevention, waste minimization, and cost savings. The effort is involves an EWP team's efforts to sort through the waste dumpsters and catalogue the waste contents. This effort was followed-up by an evaluation to ascertain how best to reduce waste, through a combination of better pre-job planning, materials used, recycling, and the like. The report is available on the EWP homepage.				
	Work Planning and Control System Standard (ESH1, 3,6) A laboratory-wide work control standard was created that provides the criteria on how to manage work activities using a graded approach and the ISM core functions. The standard applies to research departments as well as to maintenance and other service organizations. The document provides the graded approach methodology to screen all jobs into a low, moderate, and high hazard categories, and the expected level of planning rigor with each level. A degree of flexibility has been provided in the standard to allow the research organizations to tailor their system for controlling work requests. A risk versus complexity matrix is shown to illustrate the factors involved in making a hazard category decision.	D	I	BNL	1, 2, 3, 4, 5, 6, 7, 8
	Maintenance Manual The Savannah River Site's 1Y Manual contains site level procedural requirements that comply with DOE 4330.4B. Division maintenance organizations follow procedures in the 1Y Manual to accomplish day-to-day maintenance activities. The 1Y Manual is currently undergoing restructuring to more align with DOE 4330.4B. The restructured manual will contain three sections: nuclear requirements; non-nuclear requirements; and division specific addenda	D, CB	I	SR	1, 2, 3, 4, 5, 6, 7, 8

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Integrated Work Control (cont'd)	(exceptions that are approved by top management). Examples of procedures contained in Manual 1Y are: Work Control Procedure, Troubleshooting, Post Maintenance Testing, Procurement of Parts, Tool Control, Maintenance History & Trending, etc. The manual has been analyzed to match its contents to ISMS principles and identify "holes", between ISMS and Maintenance.				
	Work Management Centers At the Savannah River Site, the entire Maintenance workflow process was reengineered. Work Management Centers (WMC) were set up to integrate/manage maintenance work in a particular facility. All work is initiated, authorized, released, and accepted through the WMC. To accomplish this, the WMC is made up of different organizations, i.e., Radcon, Operations, Maintenance Fix-It-Now Supervisor, Engineering, Work Window Manager, and Fix-It-Now mechanics. The following attributes characterize the WMC: central location to receive/review/process work requests; facilitates parallel as opposed to sequential work reviews and approvals; and electronically statuses work in real time. WSRC 1Y Manual, Procedure 8.20 describes the Work Control Pilot Program.	D, CB	I	SR	1, 2, 3, 5, 6, 7, 8
Task Hazard Analysis	**Automated Job Hazard Analysis (AJHA)** The Hanford AJHA is a computer-based software application that supports work control and documents the process by providing an automated checklist to guide hazard and environmental impact identification, evaluation, and control. Through three key EWP elements (employee involvement, teamwork, and a graded approach), the AJHA provides a systematic way to enhance hazard identification skills, for analyzing and controlling hazards, achieve ISMS objectives, and integrate ES&H with work management.	CB	I	RL	1, 5, 6, 8

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Task Hazard Analysis (cont'd)	**Work Planning and Permit Information System** (Computerized Work Control Tool) The East Tennessee Technology Plant's (ETTP's) Work Planning and Permit Information System (WPPIS) is a comprehensive, interactive web-based system used to identify and document ES&H concerns and requirements and the necessary levels of planning. It provides a cost effective means to develop a documented, technically complete work package that properly incorporates all necessary ES&H plans, permits, and procedures. It also provides detailed guidance to the user about when a permit is to be used and how various fields within the permit should be completed. WPPIS guides and documents decisions related to the necessary level of planning rigor, degree of supervision, hazard assessment -- consistent with a risk-based, graded approach. WPPIS, a cornerstone of the site's Integrated Safety Management System, is a computerized tool now being used by work initiators, approvers, planners, ES&H organizations and craft to help identify and document hazards, job requirements, and necessary permits. WPPIS features include: "ticklers" to minimize technical errors and omissions during planning and assembly of work packages; electronic documentation of work permits and hazard controls; and automated linkages between the planning team members and to important intranet sites. By simply reducing the administrative effort necessary to compile, organize, and administer the dozens of daily job plans, WPPIS has resulted in a 100% return on the programming investment in less than three months. The system has been implemented by the majority of ETTP projects in waste management operations and maintenance and is presently being introduced to other Bechtel Jacobs organizations at Y-12, ORNL, Portsmouth and Paducah.	CB	I	OR	5, 6

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Task Hazard Analysis (cont'd)	**Electronic MSDS's for Work Orders** Approximately 2000 Formatted MSDSs for Electronic Attachment to Work Orders will be used in the new electronic work packages.	CB	I	FN	5, 6
	Skill-of-the-Craft Procedure This procedure provides guidance on assigning work to craft personnel without preparing a detailed work package when the proposed activities fall within "Skill-of-the-Craft." The procedure includes methods to evaluate tasks for risk and complexity and apply a graded approach to planning and work completion drawing on recognized abilities of skilled workers.	D	I	RL	2, 3, 4, 6, 8
	Risk and Complexity Work Control Matrix This matrix provides detailed definitions of different levels of risk and complexity and, using these levels, defines a graded approach to work control. Work control elements tied to the risk/complexity levels include: type of hazard assessment required; rigor of work instructions to be provided by planners; the need for mandatory job walkdowns; the need for package review by a multidisciplinary job review committee, and rigor of supervisory briefings.	D	I	OR	2, 3, 4, 5, 6, 8
	TWRS Desktop Instruction This tool provides guidance for developing work packages for use on jobs that have a high degree of complexity or high hazards. The identified steps are not all required all the time and are not necessarily meant to be worked in order but rather as common sense dictates. (Area Production Control Managers designate the work packages that fall into the Enhanced Work Planning criteria.)	D	I	RL	1, 2, 5, 6, 8
	Hazard Recognition Training Module A specific training module has been developed to help maintenance work planners and members of work planning teams improve their skills in recognizing potential hazards associated with work.	D	I	RL	5, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Task Hazard Analysis (cont'd)	**Hazard ID Planning for Maintenance and New Work Tasks** (June 1998) **Y-12 Plant Procedure #Y10-012** This major procedure provides requirements and processes for hazard identification throughout the Y12 Plant. Emphasis is placed on up-front identification of health and safety hazards by work originators (e.g., building owners) and planners and how the appropriate work activity planning requirements are identified. Roles of multidisciplinary Job Hazard Identification Team are defined as Job Priority Codes, Job Category Codes, Safety Significance Class, etc. This procedure utilizes a comprehensive Health and Safety Hazard Identification form/checklist that includes job screening questions, SME involvement rationale, and detailed screening questions.	D	I	OR	1, 2, 3, 4, 5, 6, 7, 8
	Job Hazards Analysis Procedure This procedure applies to Westinghouse Savannah River Company (WSRC) employees and its subcontract employees implementing the Job Hazard Analysis Program. This procedure provides guidance for performing safety evaluations to enhance the safety aspects of tasks/procedures not evaluated by existing processes (e.g., Work Clearance Permit [WCP], Radiological Work Permit, Process Hazard Analysis [PHA], Process Hazard Review [PHR], Safety Analysis Report [SAR], etc.).	CB, D	I	SR	2, 5, 6, 8
	Work Coordination Center Procedures The work coordination center procedures documents the practices and methods for managing and operating the maintenance work request/order approval process.	D	I	FN	1, 2, 4, 5, 6, 7, 8
	Vehicle for Worker Involvement in Planning An approach to maintenance work requests/orders package development was established incorporating	D	I	FN	2, 3, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Task Hazard Analysis (cont'd)	craft input. Crafts representatives now attend Work Control Center meetings and participate in walkdowns.				
	Updated Health and Safety Procedures To Reflect Changes to MT0003 These procedures document the enhanced role of the health and safety groups in the maintenance and waste management work request process.	D	I	FN	2, 5
	Model To Automate Linkage of Health and Safety Organization with Work Control Procedures This conceptual model ties three computer systems together to provide defensible data regarding workers' location, length of time at a task, permits required, and the types of exposures.	CB	I	FN	6
	Maintenance Waste Management Work "WalkDowns" A more complete and descriptive work package walkdown procedure was developed with greater worker and support group involvement. This reduced work package rejection from 40% to 15%, (a 25% efficiency improvement).	D	I	FN	5, 6, 8
	Multi-Divisional Review Process for Task Order Review 100% of all Task orders are now reviewed and approved by support organizations such as Safety and Health, Waste Characterization, Operation Support, and Rad-Control including the worker.	D	I	FN	2, 3, 5, 8
	Task Order Work Request Form This new form provides space for support groups to input information regarding the requested work in advance of the work taking place. This allows for scheduling of joint walkdowns if required and work clarification while establishing accountability.	D	I	FN	2, 3, 5, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Task Hazard Analysis (cont'd)	**Formalized Worker "WalkDown"** Workers are now required by procedure to be involved with the work planning during the early stages of development. An attachment to the Task Order work package must be completed by each Tech Lead which also requires workers and other support personnel signatures.	D	I	FN	5, 6, 8
	Hazard Identification and Analysis procedure (WV-921) includes a hazard analysis screening checklist which helps identify potential hazards early in the planning process and ensures active participation by all qualified hazard control specialists and affected work groups.	D	I	WV	5, 6
	Y-12 Plant Procedure #Y10-35-008: Planner's Guide (January 1998) This major procedure provides detailed guidance to planners on how to issue instructions dealing with maintenance job requests (MJR). Defines responsibilities for all who may be involved in initiating, planning, scheduling, and executing work and shows work flow diagrams. Includes detailed instructions and guidance on using "skill-of-the craft", "graded approach", multiple disciplines, job hazard screening, etc. Includes various forms including job walkdown checklist, job planning checklist, job package comment form, post-maintenance testing form, job revision form, etc. Also includes "job hazard and complexity matrix" which shows when various work controls are necessary such as mandatory SME reviews, formal walkdowns, formal planning coordination center meeting, and formal pre-job supervisory instructions.	D	I	OR	2,3, 5
	Rollback Handbook The Rollback Optimization Model prioritizes all contaminated areas onsite and optimizes the clean up of these contaminated areas by utilizing a proven	D	I	SR	1, 6, 8

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Task Hazard Analysis (cont'd)	computer based decision making process that optimizes resources and dollars. The Rollback Handbook provides guidance on work planning for these controlled area rollbacks and addresses: obtaining management sponsorship; identifying individual and organizational roles and responsibilities; identifying potential areas to be included; conducting a hazard identification pre-survey; performing cost benefit analysis; defining facility approved protocol; training personnel; obtaining materials and equipment; implementing plan; and lessons learned. Copies of the Rollback Handbook are available from the Savannah River Onsite EWP Facilitator.				
	Fix-It-Now Teams Savannah River Site Maintenance streamlines paperwork involved in certain jobs by using Fix-It-Now or FIN teams. The FIN teams are housed within Work Management Centers. The FIN team is dispatched almost immediately upon work request initiation to either accomplish the work with no work package or, provide key planning input. If the job is within FIN scope (i.e., <4 hours, no special permits) the FIN team performs the job, and electronically statuses the work upon completion. If a job is not within FIN scope, the FIN mechanics begin to identify hazards, requirements, etc. prior to turning the work request over to a work planner. FIN team scope and requirements are found in WSRC 1Y, Manual Procedure 8.20.	D	I	SR	2, 6, 7, 8
	Review of Experiments Standard (ESH 1,3,5) This standard was generated to provide the laboratory wide policy on the methodology to be used in planning & reviewing research experiments for potential ES&H problems. A graded approach is utilized in determining what type experiments need what level of rigor for planning and reviewing.	D	I	BNL	1, 2, 3, 4, 5, 6, 7

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Task Hazard Analysis (cont'd)	**Activity Screening Process** The generation of an Activity Screening Form (ASF) at the Rocky Flats Environmental Technology Site (RFETS) facilitates the decision-making process which is essential to ISM. Once work is identified, the ASF identifies the integrated work planning and control process to be used to plan a work activity. Specifically, identified work activities planned each fiscal year as part of the Site mission require an appropriate planning approach to ensure that work is performed safely. The ASF is incorporated into the RFETS Integrated Work Control Program (IWCP). The appropriate level of work planning is selected as a function of hazard, experience, uncertainty, and complexity. The ASF is designed to help Responsible Managers (RMs) characterize activities, profile hazards, and identify infrastructure programs and level of planning that will be used to derive controls for preventing or mitigating the hazards posed by; the work activity under consideration. The ASF is divided into three main parts; each described in more detail below. Screen 1: Activity Prescreen - determines if the work activity to be performed needs further, more detailed screening per this process (e.g., performing a prescreen per this process to establish whether the work activity requires assessment to support selecting a work planning process). A Minor Maintenance activity is an example of a task that probably would not require further screening. Screen 2: Preliminary Hazard Profile - performing a profile assessment of the type of hazards associated with the activity (for example, occupational safety, radiological, or environmental hazards) and determining the number of hazard types to be addressed by the work planning process. Screen 3: Planning Process Screen - selecting the appropriate level of planning to be used for the activity based on the hazards, the experience of the	D	I	RF	1, 2, 4, 5

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Task Hazard Analysis (cont'd)	personnel performing the project or activity, and the complexity of the work being performed.				
	Job Hazard Analysis The Integrated Work Control Program (IWCP) at the Rocky Flats Environmental Technology Site (RFETS) requires that a job walkdown and a JHA be performed to help the Planning Team understand the magnitude and intensity of the hazards involved in performing the work, and to help determine the level of controls required to perform the work safely. Once the work activity scope has been defined and properly characterized, a JHA is performed for all planning levels. A JHA is a very useful tool to help the planners and workers focus on the hazards associated with performing the work activity. A checklist is incorporated into the IWCP to invoke a questioning process to ensure the hazards are not overlooked or unplanned. This checklist provides a detailed list of hazard identification questions and techniques, while also providing the planning team with assistance in: identifying the specific training tailored to the activity and hazard; identifying the appropriate checklist or permit needed; identifying the medical monitoring requirements; along with a comprehensive list of Subject Matter Expert (e.g., RadCon, Health & Safety) support needed. A guidance document has also been developed to provide the planning team with the essential tools to help them develop the necessary control measures to mitigate the hazards.	D	I	RF	1, 2, 3, 5, 6, 8
	Job Requirements Checklist (JRC) INEEL has developed an expert based system called the Job Requirements Checklist (JRC to support hazard evaluation and work planning. The JRC is available as a tool on a browser platform for job planners. This JRC tool simplifies and streamlines maintenance work planning by using a graded	CB	I	ID	5, 6,

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Task Hazard Analysis (cont'd)	approach to standardize planning and review practices. This tool assists the job planner in evaluating hazards and determining the required rigor for planning work. It consists of a series of questions for determining the input, planning, review, and approval of a maintenance task, including required permits and other hazard mitigation requirements. Logic trees also keep planners from answering non-applicable questions. The JRC logic and questions were developed by INEEL and Department of Energy experts and are based on review checklists and processes already used by the functional support organizations.				
Work Scheduling and Prioritization	**Work Planning and Permit Information System** (Computerized Work Control Tool) The East Tennessee Technology Plant's (ETTP's) Work Planning and Permit Information System (WPPIS) is a comprehensive, interactive web-based system used to identify and document ES&H concerns and requirements and the necessary levels of planning. It provides a cost effective means to develop a documented, technically complete work package that properly incorporates all necessary ES&H plans, permits, and procedures. It also provides detailed guidance to the user about when a permit is to be used and how various fields within the permit should be completed. WPPIS guides and documents decisions related to the necessary level of planning rigor, degree of supervision, hazard assessment -- consistent with a risk-based, graded approach. WPPIS, a cornerstone of the Site's Integrated Safety Management System, is a computerized tool now being used by work initiators, approvers, planners, ES&H organizations and craft to help identify and document hazards, job requirements, and necessary permits. WPPIS features include: "ticklers" to minimize technical errors and omissions during planning and assembly of work packages; electronic	CB	I	OR	1, 2, 5, 6, 8

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Work Scheduling and Prioritization	documentation of work permits and hazard controls; and automated linkages to important intranet sites. By simply reducing the administrative effort necessary to compile, organize, and administer the dozens of daily job plans, WPPIS has resulted in a 100% return on the programming investment in less than three months. The system has been implemented by the majority of ETTP projects in waste management operations and maintenance and is presently being introduced to other Bechtel Jacobs organizations at Y-12, ORNL, Portsmouth and Paducah.				
	FERMCO Electronic Work Package and Training Automates the maintenance work request system with features such as electronic routing, electronic approval, manager alerts, electronic attachment of drawings and photos.	CB	I	OR	1, 2, 5, 6, 8
	Master Schedule for Maintenance Activities This tool is an electronic master maintenance schedule which allows support groups more time to schedule support services and reduce non-planned work activities. This process significantly reduces the time required by planners and estimators to generate schedules.	CB	I	FN	2
	Multidisciplinary Integrated Core Team A permanent multidisciplinary team has been established to identify and resolve conduct of work issues.	CB	1	FN	4
	Model To Automate Linkage of Health and Safety Organization with Work Control Procedures This conceptual model ties three computer systems together to provide defensible data regarding workers' location, length of time at a task, permits required, and the types of exposures.	CB	I	FN	5, 6

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Work Scheduling and Prioritization (cont'd)	**Maintenance Tagging System** Tagging assists the building managers in identifying work previously submitted and to help coordinate the various safety and health teams during inspections. Prevents duplicate work orders or safety inspections requests from being placed in the system.	D	I	FN	4
	Work Permit/Package Personal Protection Sheet Use of this sheet eliminates inaccuracies, inconsistencies, and improper interpretation of personal protection requirements.	D	I	FN	5, 6
	Task Order Priority System Defines and establishes conditions to appropriately prioritize the execution of Task Orders. This new system reduces "personality driven" priorities and supports project objectives.	D	I	FN	4
	Task Order Work Request Form This new form provides space for support groups to input information regarding the requested work in advance of the work taking place. This allows for scheduling of joint walkdowns if required and work clarification while establishing accountability.	D	I	FN	2, 5, 6, 8
	Formalized Worker "WalkDown" Workers are now required by procedure to be involved with the work planning during the early stages of development. An attachment to the Task Order work package must be completed by each Tech Lead which also requires workers and other support personnel signatures.	D	I	FN	5, 6, 8
	Y-12 Plant Procedure #Y10-012: Hazard ID Planning for Maintenance and New Work Tasks (June 1998) This major procedure provides requirements and processes for hazard identification throughout the Y12 Plant. Emphasis is placed on up-front	D	I	OR	1, 2, 3, 4, 5, 6, 7, 8

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Work Scheduling and Prioritization (cont'd)	identification of health and safety hazards by work originators (e.g., building owners) and planners and how the appropriate work activity planning requirements are identified. Roles of multidisciplinary Job Hazard Identification Team are defined as are Job Priority Codes, Job Category Codes, Safety Significance Class, etc. Procedure utilizes a comprehensive Health and Safety Hazard Identification form/checklist that includes job screening questions, SME involvement rationale, and detailed screening questions.				
	Y-12 Plant Procedure #Y10-35-008: Planner's Guide (January 1998) This major procedure provides detailed guidance to planners on how to issue instructions dealing with maintenance job requests (MJR). Defines responsibilities for all who may be involved in initiating, planning, scheduling, and executing work and shows work flow diagrams. Includes detailed instructions and guidance on using "skill-of-the-craft", "graded approach", multiple disciplines, job hazard screening, etc. Includes various forms including job walkdown checklist, job planning checklist, job package comment form, post-maintenance testing form, job revision form, etc. Also includes "job hazard and complexity matrix" which shows when various work controls are necessary, such as mandatory SME reviews, formal walkdowns, formal planning coordination center meeting, and formal pre-job supervisory instructions.	D	I	OR	1, 2, 3, 4, 5, 6, 7, 8
Hazard Controls	**Skill-of-the-Craft Procedure** This procedure provides guidance on assigning work to craft personnel without preparing a detailed work package when the proposed activities fall within the Skill-of-the-Craft. The procedure includes methods to evaluate tasks for risk and complexity and apply a graded approach to planning and work completion	D	I	RL	2, 3, 4, 6, 8

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Hazard Controls (cont'd)	drawing on recognized abilities of skilled workers.				
	Multidisciplinary Integrated Core Team A permanent multidisciplinary team has been established to identify and resolve conduct of work issues.	D	I	FN	5, 6, 8
	TWRS Desktop Instruction Provides guidance in developing work packages for use on those jobs that have a high degree of complexity or high hazards. The steps are not all required all the time and are not necessarily meant to be worked in order but as common sense dictates. (Area Production Control Managers designate the work packages that fall into the Enhanced Work Planning criteria.)	D	I	RL	5, 6, 8
	Maintenance Work Coordination Center Using a multidisciplinary team in the planning process facilitates communications and joint walkdown of job requests resulting in improvements in the planning process and awareness of health and safety issues.	D	I	FN	1, 2, 4, 5, 6, 7, 8
	Work Coordination Center at the Vitrification Pilot Plant A center similar to that established for the maintenance organization was established for the Vitrification Project. This work coordination center eliminated unnecessary delays resulting from tracking down signatures and transporting maintenance work requests/orders to the centralized work coordination center.	D	I	FN	1, 2, 4, 5, 6, 7, 8
	Work Coordination Center Procedures The work coordination center procedures document the practices and methods for managing and operating the maintenance work request/order approval process.	D	I	FN	1, 2, 4, 5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Hazard Controls (cont'd)	**Maintenance Work "Walkdowns"** A more complete and descriptive work package walkdown procedure was developed with greater worker and support group involvement. This reduced work package rejection from 40% to 15%, (a 25% efficiency improvement).	D	I	FN	2, 4, 5, 6, 8
	Multi-Divisional Review Process for Task Order Review 100% of all Task orders are now reviewed and approved by support organizations such as Safety and Health, Waste Characterization, Operation Support, and Rad-Control including the worker.	D	I	FN	1, 2, 4, 5, 6, 8
	Y-12 Plant Procedure #Y10-35-008: Planner's Guide (January 1998) This major procedure provides detailed guidance to planners on how to issue instructions dealing with maintenance job requests (MJR). Defines responsibilities for all who may be involved in initiating, planning, scheduling, and executing work and shows work flow diagrams. Includes detailed instructions and guidance on using "skill-of-the-craft", "graded approach", multiple disciplines, job hazard screening, etc. Includes various forms including job walkdown checklist, job planning checklist, job package comment form, post maintenance testing form, job revision form, etc. Also includes "job hazard and complexity matrix" which shows when various work controls are necessary such as mandatory SME reviews, formal walkdowns, formal planning coordination center meeting, and formal pre-job supervisory instructions.	D	I	OR	1, 2, 3, 4, 5, 6, 7, 8
	Waste Minimization Drill-Down Report The Nuclear Material Stabilization and Storage Division at the Savannah River Site is conducting an assessment of waste that is being generated and disposed of within the facilities. This effort is being	D	D	SR	6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Hazard Controls (cont'd)	conducted to not only to characterize the waste, but also to identify opportunities for pollution prevention, waste minimization, and cost savings. The effort is currently underway, which involves an EWP team's efforts to sort through the waste dumpsters and catalogue the waste contents. This effort is currently being followed up by an evaluation to ascertain how best to reduce waste, through a combination of better pre-job planning, materials used, recycling, and the like. The report is in progress and is expected to be available by September 1998.				
	Work Permit Form The key feature to the "Work Planning & Control System Standard" is the work permit which is a one page (front & back) form that must be filled out for all moderate-and high-hazard jobs. The form combines several ISM/EWP principles and core functions: define the work, hazard analysis, work controls, team review, worker involvement, graded approach, and worker feedback. One objective in creating the BNL work control standard was to have a laboratory wide form, one page, that drove the ISM/EWP requirements, followed the work package, and concisely provided the job description, job requirements, and sign-offs. The form links together such elements as safety permits, environmental restrictions, site release signature, and worker feedback request.	D	I	BNL	5, 6, 7, 8
	Lockout/Tagout Procedure (Graded Approach) Rocky Flats Environmental Technology Site (RFETS) maintenance personnel are required to comply with the Site HSP procedure (Health & Safety Practices Manual 2.08) for performing work on all electrical circuits. This procedure is elaborate in providing worker protection under all possible circumstances of voltages, task complexity and timeframes. As an EWP initiative, hourly craftsmen developed a	D	I	RF	6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Hazard Controls (cont'd)	simplified Lockout/Tagout procedure directly applicable to minor maintenance activities, using the graded approach that did not require full compliance with all the requirements of the HSP. Whereas the HSP required approximately 1 to 1-1/2 hours to complete, this new minor maintenance procedure only requires 10 to 15 minutes without compromising personal safety. Specifically, the crafts are now authorized to install their own personal locks for those minor maintenance tasks that involve single-shift and single-point isolation, and do not affect nuclear facility operations. Additionally, such work must not involve plant power utilities.				
	<u>Lockout/Tagout</u> The Lockout/Tagout (LOTO) team is composed of members from several craft shops in addition to representatives from safety and work planning. Working as a team, personnel from several craft shops drafted a revised standard based upon mandated OSHA and DOE requirements. • The LOTO program based on DOE and OSHA requirements, extends the skill-of-the-craft concept to jobs involving lockout/tagout. • The resulting standard is only 18 pages long (instead of 96 pages for the current standard) and incorporates several changes that will reduce costs and improve both safety and productivity. • The requirements to revise the lockout point database before starting work has been eliminated. • For most work, a lockout analysis will no longer be required. • Independent verification will not be required on single source or simple lockouts. • Procedural requirements for getting building manager approval have been simplified.	D	D	PX	5, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Hazard Controls (cont'd)	• Procedural requirements for group and complex lockouts remain essentially unchanged.				
	Multidisciplinary Integrated Core Team A permanent multidisciplinary team has been established to identify and resolve conduct of work issues.	D	I	FN	5, 6, 8
	Vehicle for Worker Involvement in Planning An approach to maintenance work requests/orders package development was established incorporating craft input. Crafts representatives now attend Work Control Center meetings and participate in walkdowns.	D	I	FN	1, 2, 3, 8
	Maintenance Waste Management Work "Walkdowns" A more complete and descriptive work package walkdown procedure was developed with greater worker and support group involvement. This reduced work package rejection from 40% to 15%, (a 25% efficiency improvement).	D	I	FN	1, 2, 4, 5, 6, 8
	Revised the Task Order Work Request Form This new form provides space for support groups to input information regarding the requested work in advance of the work taking place. This allows for scheduling of joint walkdowns if required and work clarification while establishing accountability.	D	I	FN	5, 6, 8
	Developed Formalized Worker "Walkdown" Workers are now required by procedure to be involved with the work planning during the early stages of development. An attachment to the Task Order work package must be completed by each Tech Lead which also requires workers and other support personnel signatures.	D	I	FN	5, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Hazard Controls (cont'd)	**Established Pre-Job Briefing** Pre-Job briefings are now mandatory which include detail review of the work required, safety and radiological concerns. Established as a tool for attachment to work package.	D	I	FN	5, 6, 8
	MK-Ferguson's *CAN DO!* Enhanced Work Planning Program Describes the strategic alliance between MK-Ferguson's *CAN DO!* construction work control program and the Oak Ridge EWP program. Written documentation is provided of how hazards are identified; how different levels of work control rigor are specified; how multidisciplinary teams are used for planning; how job walkdowns are performed; how supervisors communicate hazards to their workforce; how customer feedback and lessons learned are compiled and used; and how success in the work control system is measured.	D	I	OR	1, 2, 5, 6, 8
	Y-12 Plant Procedure #Y10-35-008: Planner's Guide (January 1998) This major procedure provides detailed guidance to planners on how to issue instructions dealing with maintenance job requests (MJR). Defines responsibilities for all who may be involved in initiating, planning, scheduling, and executing work and shows work flow diagrams. Includes detailed instructions and guidance on using "skill-of-the-craft", "graded approach", multiple disciplines, job hazard screening, etc. Includes various forms including job walkdown checklist, job planning checklist, job package comment form, post maintenance testing form, job revision form, etc. Also includes "job hazard and complexity matrix" which shows when various work controls are necessary such as mandatory SME reviews, formal walkdowns, formal planning coordination center meeting, and formal pre-job supervisory instructions.	D	I	OR	1, 2, 3, 4, 5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Hazard Controls (cont'd)	**Rollback Handbook** The Rollback Optimization Model prioritizes all contaminated areas onsite and optimizes the clean up of these contaminated areas by utilizing a proven computer based decision making process that optimizes resources and dollars. The Rollback Handbook provides guidance on work planning for these controlled area rollbacks and addresses: obtaining management sponsorship; identifying individual and organizational roles and responsibilities; identifying potential areas to be included; conducting a hazard identification pre-survey; performing cost benefit analysis; defining facility approved protocol; training personnel; obtaining materials and equipment; implementing plan; lessons learned. Copies of the Rollback Handbook are available from the Savannah River Onsite EWP Facilitator.	D	I	SR	1, 6, 8
	Waste Minimization Drill-Down Report The Nuclear Material Stabilization and Storage Division at the Savannah River Site is conducting an assessment of waste that is being generated and disposed of within the facilities. This effort is being conducted to not only to characterize the waste, but also to identify opportunities for pollution prevention, waste minimization, and cost savings. The effort is currently underway, which involves an EWP team's efforts to sort through the waste dumpsters and catalogue the waste contents. This effort is currently being followed up by an evaluation to ascertain how best to reduce waste, through a combination of better pre-job planning, materials used, recycling, and the like. The report is in progress and is expected to be available by September 1998.	D	D	SR	6, 8
	Work Permit Form The key feature to the "Work Planning & Control System Standard" is the work permit which is a one	D	I	BNL	5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Hazard Controls (cont'd)	page (front & back) form that must be filled out for all moderate-and high-hazard jobs. The form combines several ISM/EWP principles and core functions: define the work, hazard analysis, work controls, team review, worker involvement, graded approach, and worker feedback. One objective in creating the BNL work control standard was to have a laboratory wide form, one page, that drove the ISM/EWP requirements, followed the work package, and concisely provided the job description, job requirements, and sign-offs. The form links together such elements as the safety permits, the environmental restrictions, the site release signature, and worker feedback request.				
	Key Plans BNL uses the concept of having the building plans marked up or "crosshatched" to show where the safety concerns are located. The crosshatching is used to show contaminated areas, radiation areas, experimentally restricted areas, chemical/biohazard concerns, and sensitive equipment items. The service departments use the Key Plans as a cross-check for potential hazards when processing work orders. The job requester and the screener of the work requests from that area have the prime responsibility to identify location hazards, but the Key Plans have proven to be a valuable backup in highlighting hazards. The work order software system is table driven to show general warnings on the work order printouts for certain buildings as noted on the Key Plans.	D	I	BNL	5, 6,
Performance Indicators and Feedback Improvement	**Employee Job Task Analysis (EJTA)** This automated tool assists the supervisor to tabulate and organize information on job requirements, hazards, risks, and exposures to ensure that workers are placed in the appropriate medical monitoring and qualification programs for the work to be completed.	CB	I	RL	5, 6

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Performance Indicators and Feedback Improvement (cont'd)	**Chooser Model** This computerized business management tool combines both quantitative information, such as cost and profit, with qualitative information, such as relative importance to mission statement and labor issues is available. The model organizes the key project quantitative (costs and savings) and qualitative (complexity of implementation, organizational importance, regulatory interface) information into an overall framework for analysis. The information is then processed using a hybrid Linear Programming/Analytical Hierarchy Process analysis technique to produce an optimal selection of projects to pursue for a specified funding level.	CB	P	SR	4
	Performance Indicators Performance indicators not only measure progress, they are an excellent tool to communicate progress and success. Headquarters and site contractor staff have collaborated to develop outcome indicators and leading indicators to measure task-level progress and results of Integrated Safety Management Systems at the sites.	D	D	HQ	1, 2, 8
	Lessons Learned This guidance manual addresses questions such as: How much effort should planners spend on searching for lessons learned? Should the extent of the lessons learned review be based on a job's hazard and complexity (i.e., graded approach)? Is there a minimum amount of time a planner should spend on this? Which lessons learned information sources should be consulted? Guidance also focuses on how to use the automated Oak Ridge lessons learned database as well as other informational sources in the DOE Complex and beyond.	D	D	HQ	1, 2, 4, 6, 7, 8
	Established Post Job Brief Tool The new Task Order form has been designed to	D	I	FN	5, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Performance Indicators and Feedback Improvement (cont'd)	insure a post job critique is conducted by the workers.				
	Feedback System for Maintenance Users Facilitates input (feedback) to the maintenance organization for the improvement of the maintenance process.	D	I	FN	5, 6, 8
	Performance Measures for Maintenance Activities Fundamental performance measures critical to maintenance activities were established and instituted.	D	I	FN	3, 4
	Established Performance Measures for Task Order Activities Performance indicators measure specific Task Order activities were developed by the Core Team and approved by management to track improvements.	D	I	FN	3, 4
	MK-Ferguson's *CAN DO!* Enhanced Work Planning Program Describes the strategic alliance between MK-Ferguson's *CAN DO!* construction work control program and the Oak Ridge EWP program. Written documentation is provided of how hazards are identified; how different levels of work control rigor are specified; how multidisciplinary teams are used for planning; how job walkdowns are performed; how supervisors communicate hazards to their workforce; how customer feedback and lessons learned are compiled and used; and how success in the work control system is measured.	D	I	OR	1, 2, 5, 6, 8
	Issue 1 of Oak Ridge EWP Newsletter (October 1997) - Articles include: Oak Ridge Successes Lead to Hammer Award; One Million Dollars in Cost Avoidance (Y-12); EWP Activities Expand at Oak	D	I	OR	1, 2, 5, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Performance Indicators and Feedback Improvement (cont'd)	Ridge; Hazard Assessment/Job Requirements Tool Developed (ETTP); Planner's Guide Incorporates New Hazard Matrix (Y-12).				
	Issue 2 of Oak Ridge EWP Newsletter (December 1997) - Articles include: EWP Success: Y-12's Job Package Improvement Process; Oak Ridge-Wide Steering Committee Established; Job Hazard Initiative Launched; MK-Ferguson's *CAN DO!* Program Joins EWP; Portsmouth and Paducah Adopt EWP.	D	I	OR	1, 2, 5, 6, 8
	Enhanced Work Planning Communication Plan EWP has been successful because it has shared its information, decision making, and planning with the EWP community. The purpose of this communication plan is to identify and develop tools and methods to enhance communication of lessons learned from Enhanced Work Planning. The goals of this plan are to: promote the application of Enhanced Work Planning principles to all work performed complex-wide; improve networking and communication of those involved with implementing EWP (including DOE field and headquarters staff and contractor personnel); assist the field in developing a standard approach to EWP by sharing successes, roadblocks, procedures, programs, and software tools; and facilitate and promote the use of EWP as a tool to achieve Integrated Safety Management.	D	I	HQ	1, 2, 4, 5, 6, 7
	Twelve Essential Elements to Sustain EWP Document and Survey Tool The Enhanced Work Planning National Steering Committee has identified twelve elements that must be in place at a given site to ensure the long-term viability of EWP principles. The Committee also developed *suggested* action steps that each site should consider and adopt, as appropriate, for accomplishing each of the twelve elements. This tool	D	P	HQ	1, 2, 3, 4, 5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Performance Indicators and Feedback Improvement (cont'd)	will be used to communicate Headquarters' expectations of site programs and communicate site progress within the EWP community.				
	Y-12's Job Package Improvement Process Describes how a ten-fold decrease in job package technical and administrative errors/omissions has been realized within Y-12's Facility Management Operation in 1997. The process entails a detailed review by each supervisory Planning Specialist of at least one job package per week prepared by those planners in his or her group. The detailed reviews are performed using a check sheet that solicits responses to about 30 key questions regarding the quality of the job package. When the Planning Specialist determines a package to be lacking, points are assigned for each apparent deficiency and feedback is given to the planner within one day. Over a seven-month period in 1997, reductions from an average of 1.2 errors/package to 0.1 errors/package have been observed in the maintenance-planning group at Enriched Uranium Operations. For all six FMO planning groups, the errors per package has been reduced from an average of 4.5 to 0.6.	D	I	OR	1, 3
	Post-Job Review (PJR) Process The Rocky Flats Environmental Technology Site (RFETS) Integrated Work Control Program (IWCP) provides a method for conducting Post-Job Reviews (PJR). This PJR process provides an avenue whereby personnel can provide input to help identify strengths and weaknesses in order to improve the work control processes. Identification and elimination of performance weaknesses through effective PJRs lead to an upward spiral in performance that increases overall safety and health of workers and the public, protection of the environment, while also improving efficiency and	D	I	RF	8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Performance Indicators and Feedback Improvement (cont'd)	mission performance. The feedback obtained from the PJRs is not concerned with right or wrong, but with gaining information to improve the processes under discussion. The PJRs also feed into the Site's Lessons Learned program. The PJR checklist is included in all planned work packages, technical procedures, and engineering design packages to allow the worker to provide feedback at any given opportunity. The process for completing the PJR is as follows: • The Job Supervisor performs the PJR for the planning and performance of the work. This is performed with the Work Team when practical. The PJR is then submitted to the Responsible Manager (RM); • The RM reviews the PJR Checklist and evaluates if any lessons learned or areas for improvement were identified. If lessons learned, recurring issues or areas for improvement were identified, then the RM submits this information for inclusion into the Site's Lessons Learned program; If the comments identified during the PJR can be corrected immediately, then the RM ensures the comments are corrected in a timely manner and provides feedback to the work team.				
	Continuous Improvement Through You (C.I.T.Y.) The Rocky Flats Environmental Technology Site (RFETS) has developed, piloted and implemented an employee-based improvement program. The program was originated to support the feedback requirements within RFETS' Integrated Safety Management System (ISMS). The program, entitled Continuous Improvement Through You (C.I.T.Y.), is based on a collection of feedback and communication tools to encourage employees to convey ideas, employ self-assessment techniques, allow management to spend more time in the field, and remove barriers to process improvement.	D, CB	I	RF	8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Performance Indicators and Feedback Improvement (cont'd)	Specific tools include: 1) employee walk-arounds; 2) team walk-arounds; 3) management walk-arounds; 4) initiative submittals; and 5) executive-employee "brown bag" sessions. Collectively, the information gathered from individual tools is tracked to closure through the use of a database. Initiatives are tracked and monitored to ensure initiatives receive the necessary management consideration, and if approved, are implemented. Individual contributors are kept apprised of the status of their submittals, and monthly reports are provided to management on the status and effectiveness of the overall program. As part of the pilot program and initial implementation, the program has identified over $25M in potential cost avoidance initiatives and has increased communication between management and employees.				
Worker Involvement	**TWRS EWP Survey** Provided baseline data for TWRS as they organized and implemented their EWP program. The survey will be administered at a later date to provide a data to gauge continuous improvement and identify problem areas and concerns.	D	I	RL	1,8
	ISMS/EWP Survey Developed from the TWRS survey, this tool provides the same type of data for the entire ISMS/EWP implementation process. It will be institutionalized for gap analysis and baselining data for all facilities during ISMS implementation.	D	I	RL	1, 2, 3, 5, 6, 8
	Verification and Validation Tool - Methodology Calculation of $545,000 Annual Cost Avoidance: *Enhanced Use of Standing Work Packages and "Binning" of Low Hazard/Skill-of-the-Craft Maintenance Job Requests*: Detailed documentation of how cost avoidance is being achieved at Y-12	D	I	OR	2, 3, 4, 6

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Worker Involvement (cont'd)	from economies of scale associated with combining of low hazard/ "skill-of-the-craft" maintenance jobs into logical groupings or "bins". The predicted cost avoidance stems from 1) re-defining criteria that allows more jobs to be issued under simple "skill-of-the-craft" controls; and 2) setting up mechanisms whereby single Maintenance Job Requests (MJRs) can better include multiple tasks or jobs having similar elements. By allowing certain similar tasks or jobs to be "binned" together, fewer MJRs are now required. This eliminates time spent performing non-value-added activities and results in other economies of scale. Calculations provided along with signatures of validating managers and craft.				
	Post-Job Review Checklist A post-job review is performed after every corrective work order package is completed. Activities assessed include planning, support, and equipment availability. This process is to improve worker involvement by providing the worker a means to identify and communicate feedback to ensure continuous improvement in work performance. The Post Job Review Checklist will be extended to all work orders in the future once there is a better understanding of the disposition of the data.	D	I	ID	1, 4, 5, 6, 7, 8
	Skill-of-the-Craft Procedure This procedure provides guidance on assigning work to craft personnel without preparing a detailed work package when the proposed activities fall within the skill-of-the-craft. The procedure includes methods to evaluate tasks for risk and complexity and apply a graded approach to planning and work completion drawing on recognized abilities of skilled workers.	D	I	RL	1, 2, 3, 4, 5, 6, 8
	Multidisciplinary Integrated Core Team A permanent multidisciplinary team has been established to identify and resolve conduct of work issues.	D	I	RN	1, 2, 3, 4, 5, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Worker Involvement (cont'd)	**Vehicle for Worker Involvement in Planning** An approach to maintenance work requests/orders package and waste management task orders development was established incorporating craft input. Crafts representatives now attend Work Control Center meetings and participate in walkdowns.	D	I	FN	1, 2, 3, 8
	Hazard Recognition Training Module A specific training module has been developed to help maintenance work planners and members of work planning teams improve their skills in recognizing potential hazards associated with work.	D	I	RL	5, 6, 8
	Maintenance and Waste Management Work Coordination Center Using a multidisciplinary team in the planning process facilitates communications and joint walkdown of job requests resulting in improvements in the planning process and awareness of health and safety issues.	D	I	FN	1, 2, 3, 4, 7, 8
	Work Coordination Center at the Vitrification Pilot Plant A center similar to that established for the maintenance organization was established for the Vitrification Project. This work coordination center eliminated unnecessary delays resulting from tracking down signatures and transporting maintenance work requests/orders to the centralized work coordination center.	D	I	FN	1, 2, 3, 4, 7, 8
	Work Coordination Center Procedures The work coordination center procedures document the practices and methods for managing and operating the maintenance work request/order approval process.	D	I	FN	1, 2, 3, 4, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Worker Involvement (cont'd)	**Vehicle for Worker Involvement in Planning** An approach to maintenance and waste work requests/orders package development was established incorporating craft input. Crafts representatives now attend work control center meetings and participate in walkdowns.	D	I	FN	1, 2, 3, 4, 8
	Maintenance and Waste Work "Walkdowns" A more complete and descriptive work package walkdown procedure was developed with greater worker and support group involvement. This reduced work package rejection from 40% to 15%, (a 25% efficiency improvement).	D	I	FN	4, 5, 6, 8
	Revised the Task Order Work Request Form This new form provides space for support groups to input information regarding the requested work in advance of the work taking place. This allows for scheduling of joint walkdowns if required and work clarification while establishing accountability.	D	I	FN	1, 2, 3, 4, 5, 6, 8
	Developed Formalized Worker "Walkdown" Workers are now required by procedure to be involved with the work planning during the early stages of development. An attachment to the Task Order work package must be completed by each Tech Lead which also requires workers and other support personnel signatures.	D	I	FN	1, 2, 3, 4, 5, 6, 8
	MK-Ferguson's *CAN DO!* Enhanced Work Planning Program Describes the strategic alliance between MK-Ferguson's *CAN DO!* construction work control program and the Oak Ridge EWP program. Written documentation is provided of how hazards are identified; how different levels of work control rigor are specified; how multi disciplinary teams are used for planning; how job walkdowns are performed; how supervisors communicate hazards to their workforce;	D	I	OR	1, 2, 5, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Worker Involvement (cont'd)	how customer feedback and lessons learned are compiled and used; and how success in the work control system is measured.				
	Continuous Improvement Through You (C.I.T.Y.) The Rocky Flats Environmental Technology Site (RFETS) has developed, piloted and implemented an employee based improvement program. The program was originated to support the feedback requirements within RFETS' Integrated Safety Management (ISM). The program, entitled Continuous Improvement Through You (C.I.T.Y.), is based on a collection of feedback and communication tools to encourage employees to convey ideas, employ self-assessment techniques, allow management to spend more time in the field, and remove barriers to process improvement. Specific tools include: 1) employee walk-arounds; 2) team walk-arounds; 3) management walk-arounds; 4) initiative submittals; and 5) executive-employee "brown bag" sessions. Collectively, the information gathered from individual tools is tracked to closure through the use of a database. Initiatives are tracked and monitored to ensure initiatives receive the necessary management consideration, and if approved, are implemented. Individual contributors are kept apprised of the status of their submittals, and monthly reports are provided to management on the status and effectiveness of the overall program. As part of the pilot program and initial implementation, the program has identified over $25M in potential cost avoidance initiatives and has increased communication between management and employees.	D, CB	I	RF	8
Training	**Cross-Trained Safety/IH/RadCon Personnel To Provide Representation of These Disciplines During Work Control Center Reviews** This training provides enhanced utility of health and	D	I	FN	1, 2, 3, 5, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Training (cont'd)	safety personnel by allowing them to provide appropriate input into the work authorization process.				
	TWRS Desktop Instruction Provides guidance in developing work packages for use on those jobs that have a high degree of complexity or high hazards. The steps are not all required all the time and are not necessarily meant to be worked in order but as common sense dictates. (Area Production Control Managers designate the work packages that fall into the Enhanced Work Planning criteria.)	D	I	RL	5, 6, 8
	Hazard Recognition Training Module A specific training module has been developed to help maintenance work planners and members of work planning teams improve their skills in recognizing potential hazards associated with work.	D	I	RL	5, 6, 8
	Job Hazards Analysis Procedure This procedure applies to Westinghouse Savannah River Company (WSRC) employees and their subcontract employees implementing the JHA Program. This procedure provides guidance for performing safety evaluations to enhance the safety aspects of tasks/procedures not evaluated by existing processes (e.g., Work Clearance Permit [WCP], Radiological Work Permit, Process Hazard Analysis [PHA], Process Hazard Review [PHR], Safety Analysis Report [SAR], etc.)	D	I	SR	2, 5, 6, 8
	A video developed at Savannah River which describes how EWP's integration into ISMS, maintenance reengineering and rollback successes, and the process of setting EWP up as an improvement process to be used when resolving worker safety and environmental issues.	AV	I	SR	1, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Training (cont'd)	**Maintenance Work Coordination Center** Using a multidisciplinary team in the planning process facilitates communications and joint walkdown of job requests resulting in improvements in the planning process and awareness of health and safety issues.	D	I	FN	5, 6, 8
	Work Coordination Center at the Vitrification Pilot Plant A center similar to that established for the maintenance organization was established for the Vitrification Project. This work coordination center eliminated unnecessary delays resulting from tracking down signatures and transporting maintenance work requests/orders to the centralized work coordination center.	D	I	FN	5, 6, 8
	Work Coordination Center Procedures The work coordination center procedures document the practices and methods for managing and operating the maintenance work request/order approval process.	D	I	FN	5, 6, 8
	ISMS Brochure and Display Provides for improved communication and understanding of the ISMS/EWP Plan. Provided exposure of the ISMS/EWP program to the entire Tri-Cities area including business, schools, and workers. The display will be used as a training and communication tool as ISMS/EWP is implemented throughout the Hanford site.	D	I	RL	8
	Issue 1 of Oak Ridge EWP Newsletter (October 1997): Articles include: Oak Ridge Successes Lead to Hammer Award; One Million Dollars in Cost Avoidance (Y-12); EWP Activities Expand at Oak Ridge; Hazard Assessment/Job Requirements Tool Developed (ETTP); Planner's Guide Incorporates New Hazard Matrix (Y-12).	D	I	OR	1, 2, 5, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Training (cont'd)	**Issue 2 of Oak Ridge EWP Newsletter** (December 1997): Articles include: EWP Success: Y-12's Job Package Improvement Process; Oak Ridge-Wide Steering Committee Established; Job Hazard Initiative Launched; MK-Ferguson's *CAN DO!* Program Joins EWP; Portsmouth and Paducah Adopt EWP.	D	I	OR	1, 2, 5, 6, 8
	EWP Training This training will help export the EWP process to other FERMCO groups.	D/AV	I	FN	1, 2, 5, 6, 8
	Hanford Occupational Health Process Model This model provides an optimal approach to enhancing occupational health programs involving medical, safety and health, and training personnel in establishing risk-based medical monitoring and qualification programs.	CB	I	RL	5, 6
	Automated Job Hazard Analysis User Guide The AJHA User Guide contains detailed instruction for accessing the various AJHA screens and provides images of the actual screens in support of AJHA completion. Guidance for using a team approach to work planning, worker involvement, risk and complexity based (graded) approaches, requirements management, and communication of hazards and controls is also provided to support AJHA implementation within ISMS principles and core functions in order to meet ISMS expectations.	B\CB, D	I	RL	1, 5, 6, 8
	Outline of EWP Implementation Training Course (January 1998) Tailored outline of the standard, one day EWP Implementation course including course description, target audience, and instructional methods.	D, AV	I	OR	1, 2, 8
	Maintenance Work Control Procedure Training (four levels) Work Control Process Level I Training --	D	I	ID	2, 5, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Training (cont'd)	all employees received a simple, yet informative brochure entitled "How to Get Things Done." The brochure briefly describes how to request maintenance services and lists names and numbers of experts around the site to call with questions. Not only does the brochure inform employees about the purpose and goals for enhanced work planning but it remains a valuable reference.				
	Work Control Process Level II Training -- consists of a 13 minute video developed by the team and is shown to anyone involved with the work control process or about 1,200 employees.	D	I	ID	2, 3, 5, 7, 8
	Work Control Process Level III Training -- focuses on the "primary owners" or those responsible for work order execution. This approximate 4 hour training course doesn't take the form of a standard classroom lecture. The team developed a board game that encompasses all aspects of maintenance work control in the form of hands-on scenarios. Players receive work requests and make decisions. Following the paths on the board, players learn the correct procedures and the steps involved in implementing the new MCP 2798, Maintenance Work Control.	D	I	ID	1, 3, 5, 6, 7
	Work Control Process Level IV Training -- on going and job specific such as detailing the use of the Job Requirements Checklist or explaining the skill-of-the-craft requirements.	D	I	ID	1, 2, 4, 5, 6, 7
	Job Requirements Checklist Training Self-paced lesson which introduces and guides planners through a hands-on application of the JRC. In the training, participants generate a Request for Services and a JRC. The following topics are covered: purpose for the JRC; when the JRC is used; where the Request for Services is located and how it is accessed; the Request for Services process;	D	I	ID	5, 6

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Training (cont'd)	where the JRC is located and how it is accessed; the JRC process; the information available on the on-line help pages, and its value in completing the JRC.				
	Enhanced Work Planning National Training Curriculum A tool critical to implementing a consistent approach to EWP is the EWP training. It is focused on understanding and applying key EWP principles as well as providing an avenue for each site to tailor the curriculum to meet its specific needs. The three-course curriculum includes an introduction to EWP along with training on EWP fundamentals, and EWP implementation and team formation and utilization.	D	I	HQ	1, 2, 5, 6, 7
	Maintenance Training Training provides an improved understanding of DOE, guidance, and improvement in the development of Fernald Environmental Management Project plans and procedures used to implement DOE 4330.4B, understanding of improved Maintenance Implementation Procedure, and fosters a widespread acceptance of maintenance management concept.	D	I	FN	4, 5, 6, 8
	Planner/Scheduler Training Training resulted in an increased accuracy in the planning and scheduling process. In addition, improvements in efficiency, cost estimations, and use of lessons learned have been seen.	D	I	FN	4, 5, 6, 8
Infrastructure	**Updated Health and Safety Procedures To Reflect Changes in MT0003** These procedures document the enhanced role of the health and safety groups in the maintenance work request process.	D	I	FN	1, 2, 5, 8
	Enhanced Work Planning Principles A statement of principles including a mission statement and code of ethics/values to be used in	D	I	RL	1, 2, 6, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Infrastructure (cont'd)	implementing Enhanced Work Planning Demonstration Projects was prepared for the Hanford Site and used in organizing Core Teams for each facility's demonstration project.				
	Integrated Safety Management Training At RFETS, the goal is to do work safely. The site has integrated Enhanced Work Planning and Self-Assessment activities into a focused approach to Integrated Safety Management. This graphic provides a visual "snapshot" of this integration.	D	I	RF	1, 2, 5, 6, 8
	BNFL Enhanced Work Planning Instruction #MI-RC-008: EWP: Three Building D&D and Recycle Project (November 1997). This instruction assigns responsibilities for implementing the EWP process and satisfying the requirements of the BNFL Integrated Safety Management Plan. (Controlled and proprietary document; contact Chris Caldwell, BNFL, 423-241-1998, for additional information).	D	I	OR	1, 2, 3, 8
	BNFL Instruction #IIG-RC-004: Enhanced Work Planning Implementation: Three Building D&D and Recycle Project (Nov. 1997) This instruction identifies the process for implementing EWP so as to ensure that BNFL instructions and instructional guides are properly prepared to provide individuals with information necessary to accomplish work safely. It describes the steps for launching EWP initiatives to improve work control and identifies the disciplines that should be involved during each respective step. It also details the responsibilities of the EWP team, the Work Group team, the managers in charge. (Controlled and proprietary document; contact Chris Caldwell, BNFL , 423-241-1998, for additional information).	D	I	OR	1, 2, 3, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Infrastructure (cont'd)	**Charter and Membership List for Oak Ridge EWP Steering Committee and Interested Stakeholders Team** Identifies membership, duties, and responsibilities of Reservation-wide EWP Steering Committee and Interested Stakeholders Team at Oak Ridge.	D	I	OR	1, 2, 8
	EWP Process Guide The purpose of the Savannah River EWP Process guide is to document and build on the successful processes that DOE has developed in the field, working with sites around the DOE complex. This guide serves to transfer this knowledge and experience. It is written as a "how-to" document that combines methods for successful EWP implementation, as well as the pitfalls that can occur when trying to implement EWP. This guide is currently in draft form with a final draft available in September.	D/AV	P	SR	
	Gap Analysis The maintenance work implementation process was recently reengineered with several improvement initiatives identified, as described in Manual WSRC 1Y, Procedure 8.20, Work Control Pilot Procedure. These improvements were reviewed through a Gap Analysis to identify the extent to which the five EWP elements are incorporated into the reengineered work planning process.	D	I	SR	2, 3, 8
	Enhanced Work Planning Steering Committee A group of DOE and DOE Site Contractor representatives from DOE facilities participating in recognized Enhanced Work Planning programs and who can represent those programs in the complex and to other committee members and potential committee members. The purpose of the Enhanced Work Planning Steering Committee is to ensure that the definition of EWP and its key principles are	N/A	I	HQ	1, 2, 3, 4, 5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Infrastructure (cont'd)	understood and applied; promote a complex-wide movement toward a consistent approach to the control of work; promote and support the institutionalization and expansion of EWP throughout the DOE complex; provide an active avenue for DOE sites to communicate, network, and share lessons learned, products, systems, and implementation ideas to improve ongoing EWP efforts; incorporate best practices as a means to identify effective private-sector processes against which DOE projects can be benchmarked in order to improve EWP site programs continuously; assist in integrating EWP with other DOE programs and initiatives (e.g., Integrated Safety Management, Voluntary Protection Program, Self-Assessment, Responsible Care).				
	Enhanced Work Planning Communication Plan EWP has been successful because it has shared its information, decision making, and planning with the EWP community. The purpose of this communication plan is to identify and develop tools and methods to enhance communication of lessons learned from Enhanced Work Planning. The goals of this plan are to: promote the application of Enhanced Work Planning principles to all work performed complex-wide; improve networking and communication of those involved with implementing EWP (including DOE field and headquarters staff and contractor personnel); assist the field in developing a standard approach to EWP by sharing successes, roadblocks, procedures, programs, and software tools; and facilitate and promote the use of EWP as a tool to achieve Integrated Safety Management.	D	I	HQ	1, 2, 3, 4, 5, 6, 7, 8
	Enhanced Work Planning Homepage (http://tis-nt.eh.doe.gov/wpphm/ewp) The EWP homepage makes EWP information available, through the World Wide Web to an infinite	N/A	I	HQ	1, 2, 3, 4, 5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Infrastructure (cont'd)	number of people throughout the DOE complex and the private sector. The page contains information about Enhanced Work Planning at Headquarters and around the DOE complex. Also contained on the page are the successes, contacts, tools, products, and procedures developed to enhance work control systems at the DOE sites involved in EWP programs.				
	Enhanced Work Planning Newsletter A valuable source of lessons learned and genera information that document the progress made at each site implementing EWP. Published quarterly, the Newsletter has a wide distribution and is used a: a communication tool to prompt sites to seek more detailed information from site contacts or from the EWP homepage. New tools developed during the quarter are referenced in the newsletter and made available on the EWP Homepage.	D	I	HQ	1, 2, 3, 4, 5, 6, 7, 8
	Twelve Essential Elements to Sustain EWP Document and Survey Tool The Enhanced Work Planning National Steering Committee has identified twelve elements that must be in place at a given site to ensure the long-term viability of EWP principles. The Committee also developed *suggested* action steps that each site should consider and adopt, as appropriate, for accomplishing each of the twelve elements. This tool will be used to communicate Headquarters' expectations of site programs and communicate site progress within the EWP community.	D	P	HQ	1, 2, 3, 4, 5, 6, 7, 8
	EWP Counterpart Conference Calls, Meetings, and Workshops The EWP Steering Committee sponsors EWP bi-weekly conference calls, counterpart meetings, and workshops for more intensive interaction among EWP site representatives. Some of these meetings will be held in conjunction with ISM meetings in order to more effectively integrate EWP and ISM to reach a	N/A	I	HQ	1, 2, 3, 4, 5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Infrastructure (cont'd)	larger audience for communication of the EWP process, results, and successes.				
Program and Process Plans	**Integrated Environment, Safety and Health Management System Plan (ISMS)** (HNF-MP-003) Fully integrates environment, safety and health with work planning and execution, with the objective being to "do work safely" while protecting the worker, public, and environment. The EWP essential elements are fully integrated into the ISMS Guiding Principles and Core Functions. Provides for improved communication and understanding of the ISMS/EWP Plan.	D	I	RL	1, 2, 3, 4, 5, 6, 7, 8
	Hanford Occupational Health Process Model This model provides an optimal approach to enhancing occupational health programs involving medical, safety and health, and training personnel in establishing risk-based medical monitoring and qualification programs.	D	I	RL	1, 5, 6, 8
	Integrated Work Control Program Manual This manual establishes requirements for the Integrated Work Control Program (IWCP) at the Rocky Flats Environmental Technology Site (Site). All work performed at the Site is governed by this manual. This manual applies to all Site employees and subcontractors involved in onsite work. The requirements of this new version of the Integrated Work Control Program apply to all work activities. Work falling in specific categories, such as minor maintenance and emergency work, will be screened out early in the process to allow expeditious handling of the work. This manual combines a number of formerly existing processes in an integrated fashion to simplify establishing the requirements for accomplishing work. This manual identifies an activity, uses the selected planning method to identify the hazards, develop the controls, and implement the controls, selects and uses the appropriate vehicle for	D	I	RF	1, 2, 3, 4, 5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Program and Process Plans (cont'd)	establishing the controls, gives direction for special cases of performing work such as Preventive Maintenance Operations (PMO), Emergency Work, and Minor Maintenance, and provides guidance for feedback to these processes and post-maintenance testing or review.				
	ETTP Procedure #IAD-SPP-2007: Safe Work Planning and Control Process Using the WPPIS This procedure establishes a revised work planning process at ETTP fully utilizing the newly developed automated WPPIS program. The procedure redefines and enhances the basic process for planning and performing work safely throughout ETTP organizations. The effective use of WPPIS is a key component of this procedure, which applies to all personnel involved in planning, supervising, conducting, or supporting physical work at ETTP. The procedure became effective January 1998 and is being phased into all remaining ETTP work control organizations per an approved implementation schedule. The work control enhancements incorporated in the procedure are expected to result in improved safety, substantial cost avoidance, and effective implementation of the Site's Integrated Safety Management System at the activity level.	D	I	OR	2, 3, 4, 5, 6
	Y-12 Plant Procedure #Y10-35-008: Planner's Guide (January 1998) This major procedure provides detailed guidance to planners on how to issue instructions dealing with maintenance job requests (MJR). Defines responsibilities for all who may be involved in initiating, planning, scheduling, and executing work and shows work flow diagrams. Includes detailed instructions and guidance on using 'skill-of-the-craft', 'graded approach', multiple disciplines, job hazard screening, etc. Includes various forms including job walkdown checklist, job planning checklist, job	D	I	OR	1, 2, 3, 4, 5, 6, 7, 8

Tool Category	Tool Name and Description	Format	Status	Responsible Site	Relevance to ISM Principle(s)
Program and Process Plans (cont'd)	package comment form, post maintenance testing form, job revision form, etc. Also includes "job hazard and complexity matrix" which shows when various work controls are necessary such as mandatory SME reviews, formal walkdowns, formal planning coordination center meeting, and formal pre-job supervisory instructions.				

Tool Index Organization

Tool Categories

1. Integrated Work Control
2. Task Hazard Analysis
3. Work Scheduling and Prioritization
4. Hazard Controls
5. Performance Indicators and Feedback Improvement
6. Worker Involvement
7. Training
8. Infrastructure
9. Program and Process Plans

Format

Computer Based (CB)
Document (D)
Audio/Video (AV)

Status

Draft (D)
Pilot (P)
Implemented (I)

Responsible Sites

Brookhaven (BNL)
Fernald (FN)
Headquarters (HQ)
Idaho (ID)
Mound (MD)
Oak Ridge (OR)
Ohio (OH)
Pantex (PX)
Richland (RL)
Rocky Flats (RF)
Savannah River (SR)
West Valley (WV)

ISM Principles

1. Line Management Responsibility for Safety
2. Clear Roles and Responsibilities
3. Competence Commensurate with Responsibilities
4. Balanced Priorities
5. Identification of Safety Standards and Requirements
6. Hazard Controls Tailored to Work Being Performed
7. Operations Authorization
8. Work Involvement

Integrated Safety Management System Activity-Level Work Control Tools
Table of Contents

Tool Category	Page	Tool Name and Description	Format	Status	Responsible Site	Line Management Responsibility for Safety 1	Clear Roles and Responsibilities 2	Competence Commensurate with Responsibilities 3	Balanced Priorities 4	Identification of Safety Standards and Requirements 5	Hazard Controls Tailored to Work Being Performed 6	Operations Authorization 7	Work Involvement 8
	8	Work Coordination Center Procedures	D	I	FN	x	x		x	x	x	x	x
	8	Vehicle for Worker Involvement in Planning	D	I	FN		x	x					x
	9	Updated Health and Safety Procedures	D	I	FN		x			x			
	9	Model To Automate Linkage of Health and Safety Organization with Work Control Procedures	CB	I	FN						x		
	9	Maintenance Waste Management Work "WalkDowns"	D	I	FN		x		x	x	x		x
	9	Multi-Divisional Review Process for Task Order Review	D	I	FN		x	x		x			x
	9	Task Order Work Request Form	D	I	FN		x	x		x			x
	10	Formalized Worker "WalkDowns"	D	I	FN					x	x		x
	10	Hazard Identification and Analysis Procedure	D	I	WV					x	x		
	10	Y-12 Plant Procedure: Planner's Guide	D	I	OR		x	x		x			
	10	Rollback Handbook	D	I	SR	x					x		x
	11	Fix-It-Now Teams	D	I	SR		x				x	x	x
	11	Review of Experiments Standard	D	I	BNL	x	x	x	x	x	x	x	
	12	Activity Screening Process	D	I	RF	x	x		x	x			
	13	Job Hazard Analysis (JHA)	CB	I	RF	x	x	x		x	x		x
	13	Job Requirements Checklist (JRC)		I	ID					x	x		
Work Scheduling and Prioritization	**14**	Work Planning and Permitting Information System	CB	I	OR	x	x			x	x		x
	15	Electronic Work Package and Training	CB	I	FN		x						
	15	Master Schedule for Maintenance Activities	CB	I	FN				x				

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	15	Multidisciplinary Integrated Core Team	D	I	FN	x	x	x	x	x	x		x
	15	Model to Automate Linkage of Health and Safety Organization	CB	I	FN					x	x		
	16	Maintenance Tagging System	D	I	FN				x				
	16	Work Permit/Package Personal Protection Sheet	D	I	FN					x	x		
	16	Task Order Priority System	D	I	FN				x				
	16	Task Order Work Request Form	D	I	FN		x			x	x		x
	16	Formalized worker "Walkdown"	D	I	F					x	x		x
	16	Y-12 Plant Procedure: Hazard ID Planning	D	I	OR	x	x	x	x	x	x	x	x
	17	Y-12 Plant Procedure: Planner's Guide	D	I	OR	x	x	x	x	x	x	x	x
Hazard Controls	**17**	Skill-of-the-Craft	D	I	RL		x	x	x		x		x
	18	Multidisciplinary Integrated Core Team	D	I	FN					x	x		x
	18	TWRS Desktop Instruction	D	I	RL					x	x		x
	18	Maintenance Work Coordination Center	D	I	FN	x	x		x	x	x	x	x
	18	Work Coordination Center at the Vitrification Pilot Plant	D	I	FN	x	x		x	x	x	x	x
	18	Work Coordination Center Procedures	D	I	FN	x	x		x	x	x	x	x
	19	Maintenance Work Walkdowns	D	I	FN		x		x	x	x		x
	19	Multi-Divisional Review Process for Task Order Review	D	I	FN	x	x		x	x	x		x
	19	Y-12 Plant Procedure: Planner's Guide	D	I	OR	x	x	x	x	x	x	x	x
	19	Waste Minimization Drill-Down Report	D	D	SR						x		x

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	20	Work Permit Form	D	I	BNL					x	x	x	x
	20	Lockout/Tagout Procedure (Graded Approach)	D	I	RF						x		x
	21	Lockout/Tagout	D	D	PX					x	x		x
	22	Multidisciplinary Integrated Core Team	D	I	FN					x	x		x
	22	Vehicle for Worker Involvement in Planning	D	I	FN	x	x	x					x
	22	Maintenance Waste Management Work Walkdowns	D	I	FN	x	x		x	x	x		x
	22	Revised the Task Order Work Request Form	D	I	FN					x	x		x
	22	Developed Formalized Worker Walkdown	D	I	FN					x	x		x
	23	Established Pre-Job Briefing	D	I	FN					x	x		x
	23	*MK-Ferguson's Can Do!* Enhanced Work Planning Program	D	I	OR	x	x			x	x		x
	23	Y-12 Plant Procedure: Planner's Guide	D	I	OR	x	x	x	x	x	x	x	x
	24	Rollback Handbook	D	I	SR	x					x		x
	24	Waste Minimization Drill-Down Report	D	D	SR						x		x
	24	Work Permit Form	D	I	BNL					x	x	x	X
	25	Key Plans	D	I	BNL					x	x		
Performance Indicators and Feedback Improvement	**25**	Employee Job Task Analysis (EJTA)	CB	I	RL					x	x		
	26	Chooser Model	CB	P	SR				x				
	26	Performance Indicators	D	D	HQ	x	x						x
	26	Lessons Learned	D	D	HQ	x	x		x		x	x	x

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	26	Established Post Job Brief Tool	D	I	FN					x	x		x
	27	Feedback System for Maintenance Users	D	I	FN					x	x		x
	27	Performance Measures for Task Order Activities	D	I	FN			x	x				
	27	*MK-Ferguson's Can Do!* Enhanced Work Planning Program	D	I	OR	x	x			x	x		x
	27	Established Performance Measures for Task Order Activities	D	I	FN			x	x				
	27	Issue 1 of Oak Ridge EWP Newsletter	D	I	OR	x	x			x	x		x
	28	Issue 2 of Oak Ridge EWP Newsletter	D	I	OR	x	x			x	x		x
	28	Enhanced Work Planning Communication Plan	D	I	HQ	x	x		x	x	x	x	
	28	Twelve Essential Elements to Sustain EWP Document and Survey Tool	D	P	HQ	x	x	x	x	x	x	x	x
	29	Y-12's Job Package Improvement Process	D	I	OR	x		x					
	29	Post-Job Review (PJR) Process	D	I	ID	x			x	x	x	x	x
	30	Continuous Improvement Through You (C.I.T.Y.)	CB/D	1	RF								x
Worker Involvement	**31**	TWRS EWP Survey	D	I	RL	x							x
	31	ISMS/EWP Survey	D	I	RL	x	x	x		x	x		x
	31	Verification and Validation Tool - Methodology	D	I	OR		x	x	x		x		
	32	Post-Job Review Checklist	D	I	ID	x			x	x	x	x	x
	32	Skill-of-the-Craft Procedure	D	I	RL	x	x	x	x	x	x		x
	32	Multidisciplinary Integrated Core	D	I	RN	x	x	x	x	x	x		x
	33	Vehicle for Worker Involvement in Planning	D	I	FN	x	x	x					x

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	33	Hazard Recognition Training Module	D	I	RL					x	x		x
	33	Maintenance Waste Management Work Coordination Center	D	I	FN	x	x	x	x			x	x
	33	Work Coordination Center at the Vitrification Pilot Plant	D	I	FN	x	x	x	x			x	x
	33	Work Coordination Center Procedures	D	I	FN	x	x	x	x			x	x
	34	Vehicle for Worker Involvement in Planning	D	I	FN	x	x	x	x				x
	34	Maintenance and Waste Work Walkdowns	D	I	FN				x	x	x		x
	34	Revised the Task Order Work Request Form	D	I	FN	x	x	x	x	x	x		x
	34	Developed Formalized Worker Walkdown	D	I	FN	x	x	x	x	x	x		x
	34	*MK-Ferguson's Can Do!* Enhanced Work Planning Program	D	I	OR	x	x			x	x		x
	35	Continuous Improvement Through You (C.I.T.Y.)	CB/D	1	RF								x
Training	**35**	Cross-Training Safety/IH/RadCon Personnel	D	I	FN	x	x	x		x			x
	36	TWRS Desktop Instruction	D	I	RL					x	x		x
	36	Hazard Recognition Training Model	D	I	RL					x	x		x
	36	Job Hazards Analysis Procedure	D	I	SR		x			x	x		x
	37	Maintenance Work Coordination Center	D	I	FN					x	x		x
	37	Work Coordination Center at the Vitrification Pilot Plant	D	I	FN					x	x		x
	37	Work Coordination Center Procedures	D	I	FN					x	x		x
	37	ISMS Brochure and Display	D	I	RL								x
	37	Issue 1 of Oak Ridge EWP Newsletter	D	I	OR	x	x			x	x		x

Tool Category	Page	Tool Name and Description	Format	Status	Responsible Site	Line Management Responsibility for Safety 1	Clear Roles and Responsibilities 2	Competence Commensurate with Responsibilities 3	Balanced Priorities 4	Identification of Safety Standards and Requirements 5	Hazard Controls Tailored to Work Being Performed 6	Operations Authorization 7	Work Involvement 8
	38	Issue 2 of Oak Ridge EWP Newsletter	D	I	OR	x	x			x	x		x
	38	EWP Training	D	I	FN	x	x			x	x		x
	38	Hanford Occupational Health Process Model	CB	I	RL					x	x		
	38	Automated Job Hazard Analysis User Guide	CB/D	I	RL	x				x	x		x
	38	Outline of EWP Implementation Training Course	D, AV	I	OR	x	x						x
	38	Maintenance Work Control Procedure Training	D	I	ID		x			x		x	x
	39	Work Control Process Level II Training	D	I	ID		x	x		x		x	x
	39	Work Control Process Level III Training	D	I	ID	x		x		x	x	x	
	39	Work Control Process Level IV Training	D	I	ID	x	x		x	x	x	x	
	39	Job Requirements Checklist Training	D	I	ID					x	x		
	40	Enhanced Work Planning National Training Curriculum	D/AV	I	HQ	x	x			x	x	x	
	40	Maintenance Training	D	I	FN				x	x	x		x
	40	Planner/Scheduler Training	D	I	FN								
Infrastructure	**40**	Updated Health and Safety Procedures to Reflect Changes in MT0003	D	I	FN	x	x			x			x
	40	Enhanced Work Planning Principles	D	I	RL	x	x				x		x
	41	Integrated Safety Management Training	D	I	RF	x	x			x	x		x
	41	BNFL Enhanced Work Planning Instruction #MI-RC-008	D	I	OR	x	x	x					x
	41	BNFL Enhanced Work Planning Instruction #IIG-RC-004	D			x	x	x					x
	42	Charter and Membership List for Oak Ridge EWP Steering Committee and Interested Stakeholders	D	I	OR	x	x						x

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	42	EWP Process Guide	D/AV	P	SR	x	x				x		x
	42	Gap Analysis	D	I	SR		x	x					x
	42	Enhanced Work Planning Steering Committee	D	I	HQ	x	x	x	x	x	x	x	x
	43	Enhanced Work Planning Communication Plan	CB	I	HQ	x	x	x	x	x	x	x	x
	43	Enhanced Work Planning Homepage (http://tis-nt.eh.doe.gov/wpphm/ewp)	CB	I	HQ	x	x	x	x	x	x	x	x
	44	Enhanced Work Planning Newsletter	D	I	HQ	x	x	x	x	x	x	x	x
	44	Twelve Essential Elements to Sustain EWP Document and Tool Survey	D	P	HQ	x	x	x	x	x	x	x	x
	44	EWP Counterpart Conference Calls, Meetings, & Workshops	D	I	HQ	x	x	x	x	x	x	x	x
Program and Process Plans	**45**	Integrated Environment, Safety and Health Management System, Plan (ISMS)	D	I	RL	x	x	x	x	x	x	x	x
	45	Hanford Occupational Health Process Model	D	I	RL	x				x	x		x
	45	Integrated Work Control Program Manual	D	I	RL	x	x	x	x	x	x	x	x
	46	ETTP Procedure #IAD-SPP-2007	D	I	OR		x	x	x	x	x		
	46	Y-12 Plant Procedure #Y10-35-008: Planner's Guide	D	I	OR	x	x	x	x	x	x	x	x